TECHNICAL MEMORANDUM

Date:	December 12, 2013	**Project No.:**	013-1646-013.500.01
To:	Will Ernst	**Company:**	The Boeing Company
From:	Denise Carscadden, PE		
cc:	Kent Angelos & Ted Norton (Golder)	**Email:**	dcarscadden@golder.com
RE:	**SOUTH ENTRY GATE LIGHT POLES COMPLETION**		

1.0 INTRODUCTION

The Boeing Company (Boeing) completed installation of four light poles west of Plant 2 Gate B-18 from October 26 through November 2, 2013 (Figure 1). The work included excavating for the light pole footings and a utility trench to supply power to the light poles, placing base gravel as needed, laying asphalt, and installing striping to the road centerline. The power poles are located within the 2-60s Area in the Plant 2 Industrial Risk Management Area (IRMA). The light poles are located along the plant east margin of the Toxic Substances Control Act (TSCA) Risk Based Determination Approval (RBDA) established for the 2010-2012 demolition project during which crushed demolition concrete was placed as fill. Applicable RBDA requirements were coordinated with the Environmental Protection Agency (EPA) TSCA office and followed during this job.

2.0 EXCAVATION

Excavations for installation of the four new light poles extended approximately 6 feet below ground surface (bgs) (Figure 2). The excavation for the utility trench to supply power to the light poles was approximately 2 feet deep, by 1 foot wide, by approximately 490 feet long. The light pole excavations were approximately 8 feet square by 6 feet deep. The excavations resulted in removal of approximately 93 cubic yards (cy) of asphalt, base gravel, fill, and subgrade soil. The excavated materials were segregated as they were removed and properly managed for characterization and disposition. Groundwater was not encountered in the excavations, as the groundwater surface at Plant 2 is typically 10 to 12 feet bgs.

3.0 SOIL AND GROUNDWATER ANALYTICAL DATA

A preconstruction review of historical soil analytical data indicated that two soil borings (SB-06211, and SB-06212) and three groundwater monitoring wells (PL2-326A, PL2-326B, and GP-06206) were located within a 25 foot radius of the work area (Figure 2). Crushed concrete data from three locations approximately 60 feet west of the project work area indicate concentrations of polychlorinated biphenyls (PCBs) range from 0.15 parts per million (ppm) to 0.28 ppm.

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One soil sample was collected from SB-06211 at a depth of 4 feet bgs and one soil sample was collected from SB-06212 at depths of 3.2 feet bgs. The samples were analyzed for volatile organic compounds (VOCs), metals, PCBs, semi-volatile organic compounds (SVOCs) which include carcinogenic polycyclic-aromatic hydrocarbons (cPAH), and total petroleum hydrocarbons (TPH). The analytical results for the soil samples indicated that no constituent of concern (COC) concentrations exceeded the draft Final Media Cleanup Levels (FMCLs) for the IRMA. The analytical results for the soil sampling are presented in Table 1 of the Technical Memorandum *South Gate Light Poles* (Golder 2013a[1]).

Historical groundwater analytical data collected from monitoring wells PL2-326A and PL2-326B and geobrobe GP-06206 located within 25 feet of the proposed light pole locations are presented in Table 2 of the technical memorandum (Golder 2013a[1]). Groundwater at Plant 2 is approximately 10 to 12 feet bgs and was not encountered during excavation for the light poles and utility trench.

4.0 CONSTRUCTION AND SUPPORT ACTIVITIES

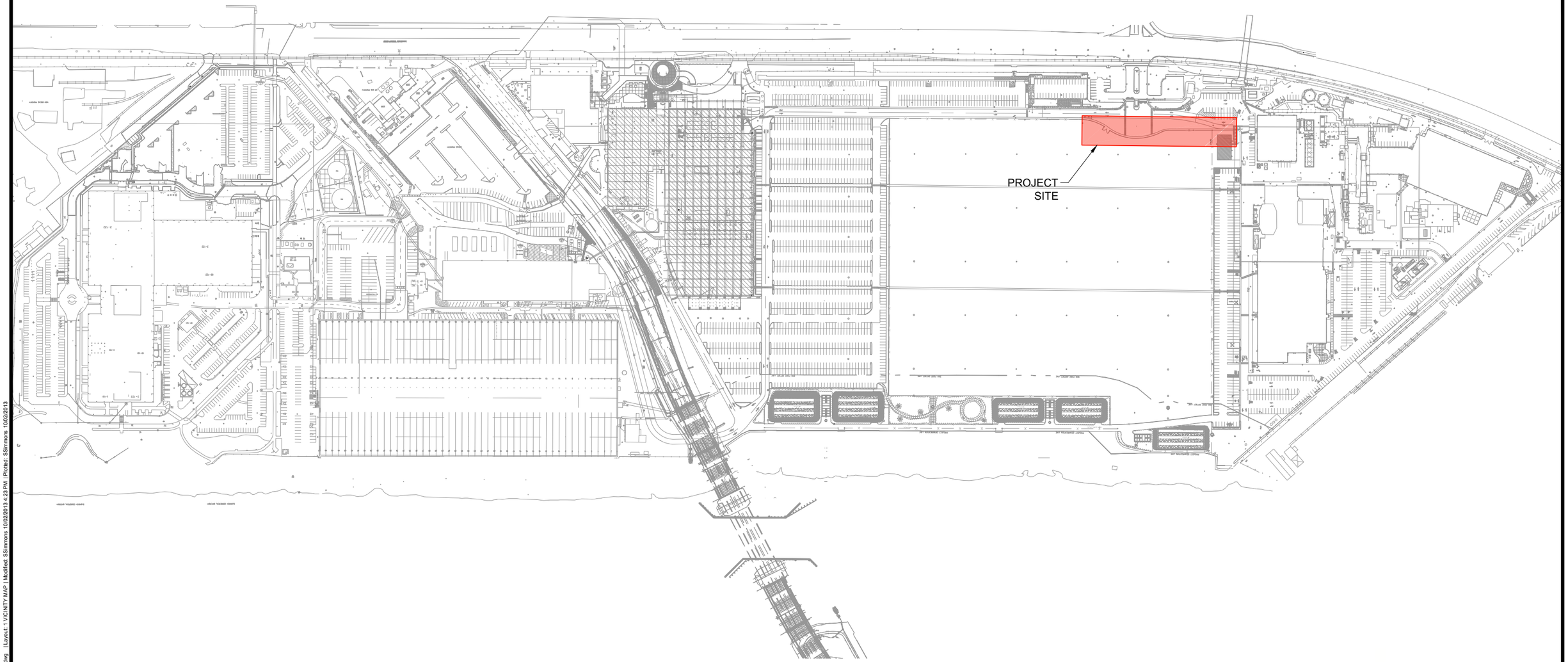
Construction support activities were conducted in accordance with Golder Associates Inc. (Golder's) August 2013 Plant 2 General Construction Health and Safety Plan (Golder 2013b[2]), and Boeing's environmental, health, and safety requirements. The support activities included environmental oversight and monitoring of pavement and soil removal. The work area and excavated materials were monitored for VOCs using a photoionization detector (PID) and Dragger tubes during sawcutting, pavement removal, and soil excavation activities. No impacted pavement or soil were observed or detected by the field screening.

No construction sampling of soil or groundwater was necessary based on the analytical data and field monitoring. The excavated materials were segregated as they were removed and properly managed for characterization and disposition. Excavated material that included any crushed concrete was handled consistent with the TSCA RBDA requirements.

List of Figures

[1] Golder Associates Inc. (Golder). 2013a. Technical Memorandum: South Gate Light Poles. Prepared for The Boeing Company. October 2.
[2] Golder. 2013b. Boeing Plant 2 Support Services. General Site Construction Health and Safety Environmental Plan. Prepared for the Boeing Company. August 13.

FIGURES



0 150 300 450
SCALE FEET

PROJECT
LIGHT POLE INSTALLATION
BOEING
SEATTLE, WASHINGTON

TITLE
LOCATION AND VICINITY MAP

Golder Associates

PROJECT No.	0131645X013.500.01		FILE No.	0131646013500001-0002-HS-0002
DESIGN	DC	2013/10/01	SCALE	AS SHOWN
CADD	SES	2013/10/01	FIGURE	
CHECK	DC	2013/10/01		1
REVIEW	TN	2013/10/01		

EAST MARGINAL WAY SOUTH

PROPERTY LINE

STOP STOP

STOP STOP

2-57

PL2-326A

PL2-326B

GP-06206

SB-06212

SB-06211

2-127
BOILER HOUSE

LEGEND

- BORING LOCATION
- MONITORING WELL LOCATION
- GEOPROBE LOCATION
- 25-FOOT BUFFER ZONE AROUND LIGHT POLES AND TRENCH EXCAVATION
- TRENCH LOCATION (APPROXIMATE)
- FENCE LOCATION (APPROXIMATE)
- PROPOSED LIGHT POLE LOCATION (APPROXIMATE)

NOTES

DATUM: NAD 83 WASHINGTON STATE PLANE
NORTH ZONE US FOOT.

0 20 40 60
SCALE FEET

PROJECT
LIGHT POLE INSTALLATION
BOEING
SEATTLE, WASHINGTON

TITLE
HISTORICAL SAMPLE LOCATIONS

Golder Associates

PROJECT No. 0131645X013.500.01			FILE No. 013164601350001-0001-HS-0001
DESIGN	DC	2013-10-02	SCALE AS SHOWN
CADD	SES	2013-10-02	FIGURE
CHECK	DC	2013-10-02	2
REVIEW	TN	2013-10-02	

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